

AD-A124 099 19318A MLRS MISSILE NUMBERS BN-225 BN-152 BN-162 BN-212 1/1

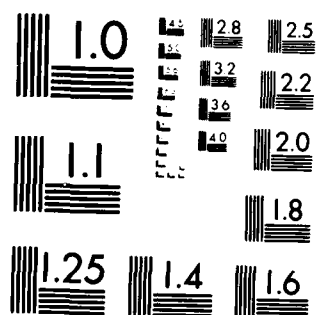
BN-222 BN-218 ROU.: (U) ARMY ELECTRONICS RESEARCH AND
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METEOROLOGICAL DATA REPORT

19818A MRS

Missile Numbers BN-225, BN-152, BN-162, BN-212, BN-222, BN-218
Round Numbers V-378/OT-7, V-379/OT-8, V-380/OT-9, V-381/OT-10
V-382/OT-11, V-383/OT-12

by

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Program Support Coordinator
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AYN Number 349-9568

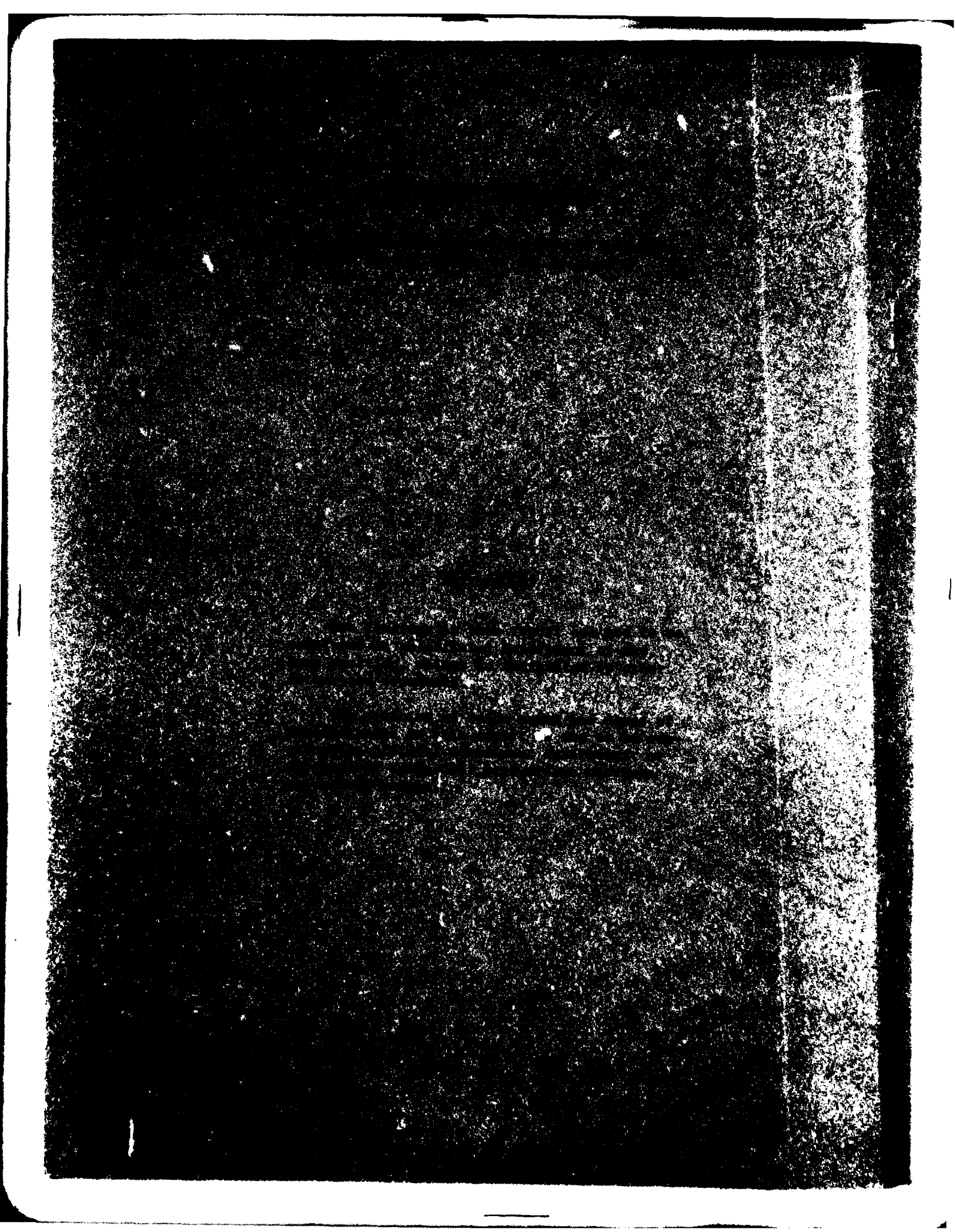
ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19318A MLRS, Missile Numbers BN-225, BN-152, BN-162, BN-212, BN-222, BN-218, Round Numbers V-378/OT-7, V-379/OT-8, V-380/OT-9, 381/OT-10, V-382/OT-11, V-383/OT-12 are presented in tabular form.		

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INTRODUCTION

19318A MLRS, Missile Numbers BN-225, BN-152, BN-162, BN-212, BN-222 and BN-218, Round Numbers V-378/OT-7, V-379/OT-8, V-380/OT-9, V-381/OT-10, V-382/OT-11 and V-383/OT-12, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1709:03, 1709:07, 1709:12, 1709:16, 1709:21 and 1709:25 MST, 06 Dec 82. The scheduled launch times were 1645 MST. With a 4.5 second separation.

DISCUSSION

→ Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes; *AND*

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room. ←

b. Upper Air

(1) Low level wind data were obtained from Pilot-balloon observations at:

SITE AND ALTITUDE

WSD 2km

DON 2km

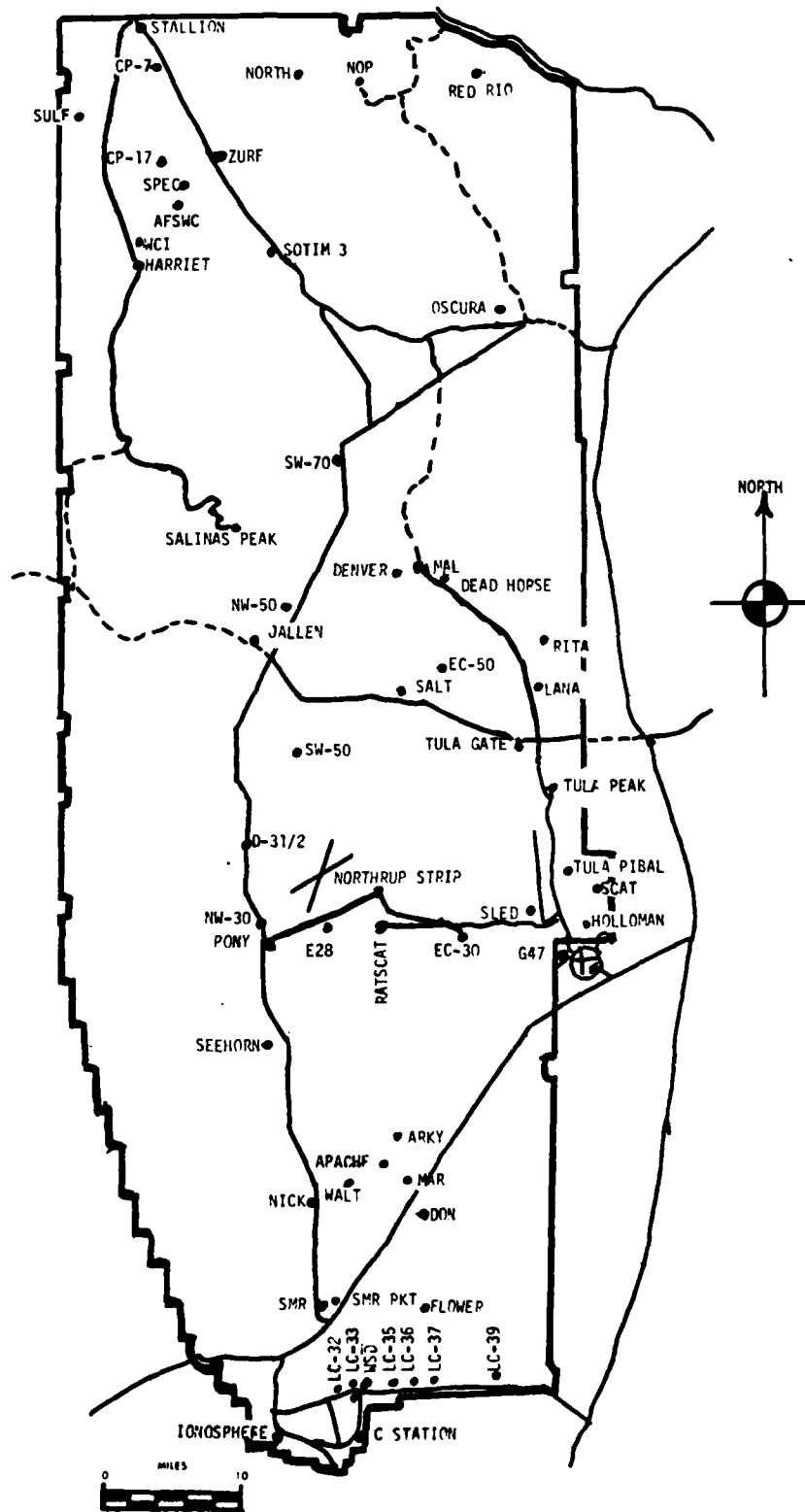
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

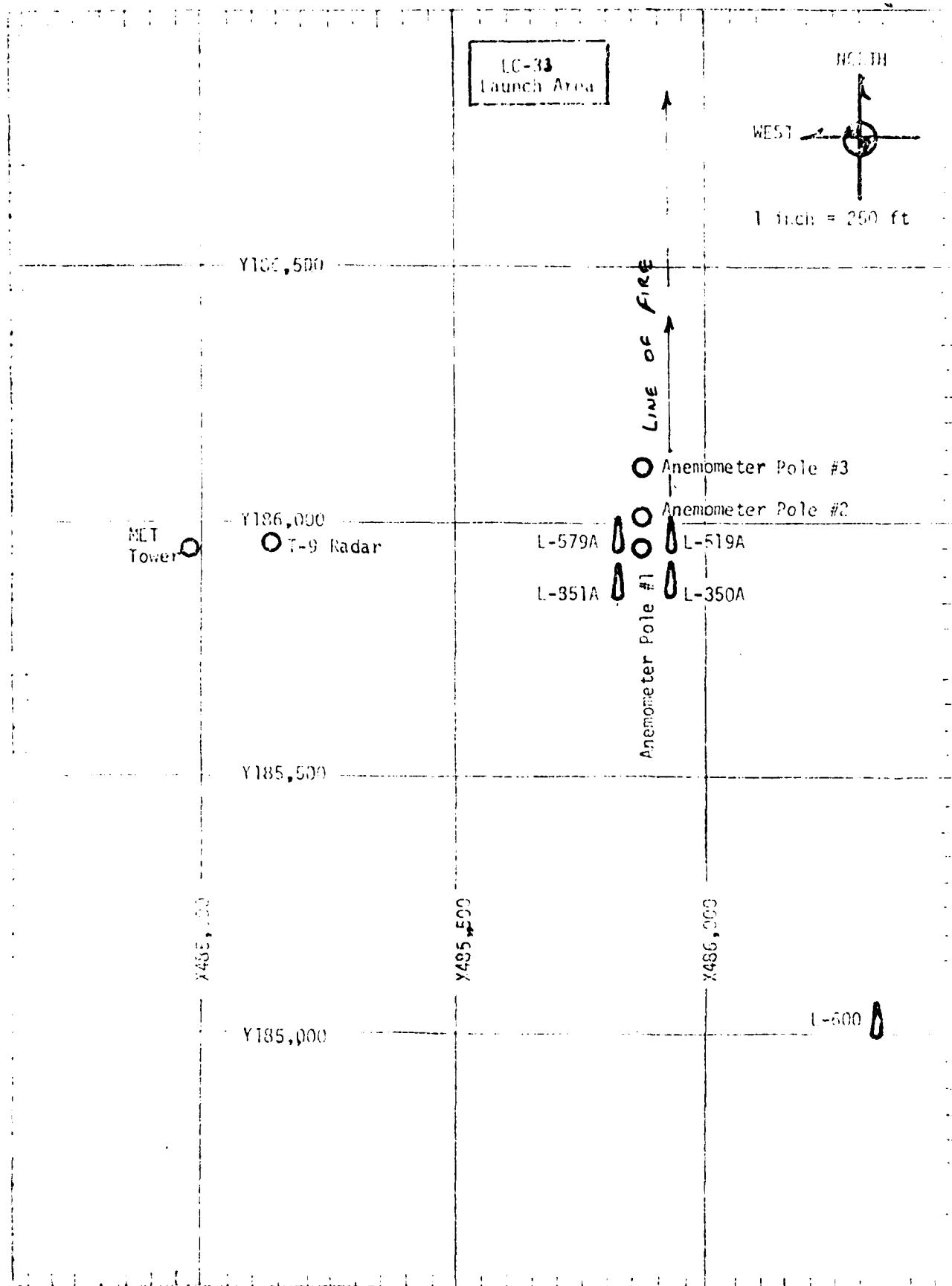
SITE AND TIME

WSD 1515 MST

WSD 1645 MST

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1 _____ STATION LC-33

DATE 6 DAY Dec 82 MONTH YEAR X= 484,982.64 Y= 185,957.73 H= 3995.00

TIME M S L	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND			VISIBIL- ITY
						DIRECTION degs In	SPEED kts	CHARACTER kts	
1709	880.3	10.0	-1.7	44	1081	180	03		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS							REMARKS		
	1st LAYER			2nd LAYER		3rd LAYER				
	AMT	TYPE	HGT	AMT	TYPE	HGT	AMT		TYPE	HGT
	0	AS	15,000	1	CI	25,000				

PSYCHROMETRIC COMPUTATION

TIME:	1710	
DRY BULB TEMP.	10.0	
WET BULB TEMP.	4.5	
WET BULB DEPR.	5.5	
DEW POINT	-1.7	
RELATIVE HUMID.	44	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
X485,874.29			X485,874.29			485,877.29		
Y185,958.90			Y186,012.00			Y186,116.06		
H4018.74			H4033.57			H4063.92		
38.7 ft. AGL			53.0 ft. AGL			83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	171	04	T-30	163	03	T-30	168	05
T-20	171	04	T-20	163	03	T-20	168	05
T-10	171	04	T-10	163	03	T-10	168	05
T 0.0	171	04	T 0.0	163	03	T 0.0	169	05
T +10	160	03	T +10	147	03	T +10	158	04

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET			LEVEL #2, 52 FEET		
X484,982.64, Y185,057.73, H3983.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	182	03	T-30	169	05
T-20	182	03	T-20	169	05
T-10	182	03	T-10	169	05
T 0.0	182	03	T 0.0	169	05
T +10	182	03	T +10	168	05

LEVEL #3, 102 FEET			LEVEL #4, 202 FEET		
X484,982.64, Y185,057.73, H3983.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	180	05	T-30	172	05
T-20	180	05	T-20	172	05
T-10	180	05	T-10	172	05
T 0.0	180	05	T 0.0	173	05
T +10	180	05	T +10	173	05

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 6 Dec 82

NAME: WSD
 TIME: 1710 MST
 WSTM COORDINATES:
 X 438,852.29
 Y 184,982.45
 H 3,993.75

SITE: DON
 TIME 1710 MST
 WSTM COORDINATES:
 X 511,988.37
 Y 247,396.36
 H 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	160	02
150	190	07
210	198	06
270	180	03
330	154	04
390	171	08
500	181	05
650	226	03
800	243	02
950	213	11
1150	213	16
1350	213	15
1550	215	18
1750	221	15
2000	227	15

Data obtained from a NIKE-HERCULES
Radar Tracked Pilot-Balloon observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
150	183	04
210	183	05
270	184	05
330	184	05
390	182	05
500	175	03
650	201	03
800	219	08
950	218	11
1150	216	10
1350	224	10
1550	228	10
1750	229	09
2000	255	10

Data obtained from a Single Theodolite
Tracked Pilot-Balloon observation.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES

06 Dec 82

WSD 1515 MST	WSD 1645 MST
METCM1324064	METCM1324064
062230122830	022380122880
00000000 28710880	00284002 28410880
01337005 23670870	01314008 28590869
02276004 28460844	02330005 28440844
03380004 28220804	03376003 28140804
04375014 28150757	04386017 28200757
05393014 27990713	05387015 28000712
	06393015 27640670

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

SIGNIFICANT LEVEL DATA

3400020001
WHITE SANDS

TABLE 6

STATION ALTITUDE 3989.70 FEET MSL
6 DEC. 82
ASCESSION NO. 001

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUM.
WILLIBARS	MSL FEET	AIR DEWPOINT DEGREES CENTIGRADE	PERCENT
830.1	3989.0	13.0	41.0
860.2	4364.6	13.0	31.0
850.0	4047.2	11.4	33.0
807.8	6335.1	7.9	34.0
778.6	7334.2	9.2	16.0
740.8	8682.7	7.2	17.0
700.0	10209.9	6.3	16.0
660.7	11435.5	3.7	16.0
		.1	
		-5.7	
		-4.3	
		-7.0	
		-15.3	
		-16.2	
		-17.6	
		-19.7	

UPPER AIR DATA
3400020001
WHITE SANDS
TABLE 7

STATION ALTITUDE 3989.00 FEET MSL
6 DEC. 52 1515 HRS MST
ASCENSION NO. 001

GEODETIC COORDINATES
32.40043 LAT DEG
106.37035 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	800.1	13.0	41.0	1068.0	659.9	00	0.0	1.000267
4000.0	879.7	13.0	40.7	1068.2	659.9	208.4	0.0	1.000268
4500.0	803.4	12.6	31.5	1051.0	659.2	208.4	1.1	1.000256
5000.0	848.4	11.3	33.0	1037.1	657.7	208.4	2.1	1.000252
5500.0	832.9	10.0	33.4	1022.8	656.2	208.4	3.1	1.000247
6000.0	817.8	8.7	33.8	1008.8	654.7	208.4	4.2	1.000243
6500.0	802.9	8.1	31.0	992.9	653.9	208.4	5.2	1.000237
7000.0	788.2	8.8	22.0	972.9	654.5	211.9	7.4	1.000229
7500.0	773.9	9.0	16.1	954.8	654.0	214.4	10.0	1.000221
8000.0	759.7	8.2	16.5	939.8	653.8	218.0	11.9	1.000218
8500.0	745.8	7.5	16.9	925.0	652.9	217.5	12.4	1.000214
9000.0	732.1	7.0	16.8	909.6	652.4	218.9	12.9	1.000211
9500.0	718.7	6.7	16.5	893.8	652.0			1.000207
10000.0	705.5	6.4	16.1	878.3	651.7			1.000203
10500.0	692.5	5.7	16.0	864.4	650.8			1.000200
11000.0	679.7	4.6	16.0	851.7	649.5			1.000196

STATION ALTITUDE 3989.00 FEET MSL
 6 DEC. 82 1515 HRS MST
 ASCENSION NO 001

MANDATORY LEVELS
 3400020601
 WHITE SANDS
 TABLE 8

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT		DIRECTION DEGREES (TN)	SPEED KNOTS
650.0	4994.	11.4	-4.3	33.		208.4	2.0
700.0	6503.	8.2	-8.6	29.		208.4	5.4
750.0	8342.	7.7	-15.9	17.		217.1	12.2
700.0	10200.	6.3	-17.6	16.			

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

SIGNIFICANT LEVEL DATA
3400020602
WHITE SANDS
TABLE 9

STATION ALTITUDE 3989.00 FEET MSL
6 DEC. 82
ASCENSION NO. 002
1645 HRS MST

PRESSURE GEOMETRIC MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
879.9 3989.0	11.9 1.3	48.0
874.0 4174.3	13.0 -2.5	34.0
850.0 4939.9	11.2 -4.5	33.0
786.2 7059.6	6.2 -5.1	44.0
771.1 7584.6	9.4 -15.9	15.0
746.6 8462.1	8.7 -16.5	15.0
700.0 10203.2	6.0 -17.9	16.0
653.8 12025.9	2.0 -21.1	16.0
593.0 14583.6	-4.2 -26.9	15.0

STATION ALTITUDE 3989.00 FEET MSL 6 DEC. 82 ASCENSION NO. 002				UPPER AIR DATA 3400020602 WHITE SANDS TABLE 10				GEODETIC COORDINATES 32.40043 LAT DEG 106.37053 LONG DEG			
GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEGREE'S	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION EGRESSES(TN)	SPEED KNOTS	INDEX OF REFRACTION		
3989.0	879.9	11.9	1.3	48.0	1072.3	658.7	160.0	1.9	1.000270		
4000.0	879.5	12.0	1.1	47.2	1071.6	658.8	160.7	2.0	1.000270		
4500.0	863.7	12.2	-3.3	33.6	1052.1	658.8	184.3	2.5	1.000257		
5000.0	848.1	11.1	-4.5	33.3	1037.5	657.4	197.8	3.3	1.000252		
5500.0	832.7	9.9	-4.5	35.9	1022.8	656.1	205.7	4.3	1.000249		
6000.0	817.5	8.7	-4.6	38.5	1008.4	654.7	210.7	5.3	1.000245		
6500.0	802.6	7.5	-4.8	41.1	994.1	653.3	214.1	6.3	1.000242		
7000.0	787.9	6.3	-5.1	43.7	980.1	652.0	216.6	7.3	1.000239		
7500.0	773.5	8.9	-13.0	19.7	954.4	654.6	216.2	10.2	1.000223		
8000.0	759.4	9.1	-16.2	15.0	936.6	654.7	215.8	13.3	1.000217		
8500.0	743.6	8.6	-16.5	15.0	920.9	654.2	216.2	15.0	1.000213		
9000.0	731.9	7.9	-16.9	15.3	906.5	653.3	217.0	15.5	1.000210		
9500.0	718.5	7.1	-17.3	15.6	892.4	652.4	217.8	16.0	1.000206		
10000.0	705.3	6.3	-17.7	15.9	878.5	651.5	218.8	16.0	1.000203		
10500.0	692.3	5.3	-18.4	16.0	865.3	650.4	220.1	15.7	1.000200		
11000.0	679.4	4.3	-19.3	16.0	852.6	649.1	221.4	15.4	1.000196		
11500.0	666.8	3.2	-20.2	16.0	840.1	647.8	223.4	15.1	1.000193		
12000.0	654.4	2.1	-21.1	16.0	827.9	646.5	225.7	14.7	1.000190		
12500.0	642.1	.9	-22.2	15.8	815.8	645.1	228.1	14.4	1.000187		
13000.0	629.9	-.4	-23.3	15.6	804.0	643.6			1.000184		
13500.0	618.0	-1.6	-24.5	15.4	792.4	642.2			1.000181		
14000.0	606.4	-2.8	-25.6	15.2	780.9	640.7			1.000178		
14500.0	594.9	-4.0	-26.7	15.0	769.6	639.3			1.000175		

STATION ALTITUDE 3989.00 FEET MSL
 6 DEC. 62 1645 HRS MST
 ASCENSION NO. 002

MANDATORY LEVELS
 3400020602
 WHITE SANDS
 TABLE 11

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT		DIRECTION (DEGREES(TN))	SPEED KNOTS
450.0	4936.	11.2	-4.5	33.		196.5	3.2
400.0	6585.	7.3	-4.9	42.		214.6	0.5
350.0	8331.	8.8	-16.4	15.		215.9	14.8
300.0	10103.	6.0	-17.9	16.		219.3	15.9
250.0	12167.	1.6	-21.5	16.		226.5	14.6
200.0	14262.	-3.5	-26.2	15.			

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